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DIRECTIONS FOR PLANTING ORCHID SEED

Orchid seed may be planted in chemist's flasks, in bottles or in fruit jars -- or in any glass container which can be closed with a cotton stopper or tight-fitting lid, such as on a fruit jar.

Preparation of Planting Medium

Orchid seed is usually planted on agar with which has been mixed certain nutrients. A standard mixture is Difco Bacto Orchid Agar, which follows Knudsen's formula. To 3 level tablespoons of this mixture, add one pint of distilled water which you can get from your drug store. Bring to a boil, and stir constantly, to prevent scorching. Divide the solution equally by pouring into five 500 cc flasks, or eight 300 cc flasks, or 5 pint fruit jars. Stopper the flasks tightly with non-absorbent cotton, or place the lids on the fruit jars. Place the containers in a pressure cooker, and sterilize for 30 minutes at 15 to 20 lbs. pressure.

After removing from the pressure cooker, let cool until the agar has "jelled". This can be hastened by setting in a pan of ice cubes.

Planting the Seed

Plant only part of seed seed at one time for reasons which will be stated in another paragraph. Sterilize the portion of seed you are going to plant by placing it in a small test tube (about $3/8$ x 3 inches) and fill the test tube to within $1/2$ inch of

with either one of the following solutions:

CLOROX (you get it at the grocery or drug store)
weakened to 1 part of Clorox to 20 parts of
water

or a

HYPOCHORITE SOLUTION made by adding a measured
2/3 cup of water to a heaping tablespoon of
chlorinated lime as sold in grocery and drug
stores. Stir vigorously to dissolve as much as
possible, let settle and use the clear solution.

Having placed the seed you are going to plant and the
sterilizing solution in the test tube, place thumb over
its mouth and shake vigorously every few minutes for
not less than 15 minutes. This is to make sure that the
solution contacts every seed. The seed are so small that
they have a tendency to bunch together -- the agitation is
necessary to separate them. A period slightly longer than
15 minutes in the sterile solution will not harm them.

At the end of the sterilizing period, shake the tube vigor-
ously and before the seed has a chance to bunch up again,
dump the contents of the tube into a funnel lined with
filter paper. (Filter paper can be bought from your drug
store.) As the solution seeps through the filter paper,
some of the seed will adhere to the side of the cone. It
can be washed down to the point of the cone with an occas-
ional drop of the sterilizing fluid dropped from a medicine
dropper which has been sterilized.

When all of the sterilizing solution has drained through
the filter paper, remove the filter paper with seed from
the funnel, and place flat before you on a clean, sterile
surface. With a fine wire, which has a loop about 1/16
inch in diameter at the end of it, and which you have
fastened to a stiff handle about 8 or 9 inches long, such
as a glass rod or a mettle rod, scoop up as much seed as
you can with the loop. (Before doing this, be sure to pass
the wire and loop through a match, candle or gas flame.)

Having gotten a portion of seed in the loop, remove cotton
stopper from a flask (or the lid from a jar), tilt contain-
er as much as possible and wash seed off in the water

which will be observed on top of the agar. Do not breathe into the container, and do not work in a draft. To do so may result in contamination of the agar from mold, which means that all of your efforts will have been wasted. Replace stopper or lid, and where stoppers are used, invert sterile glass or paper cup over top. Repeat the operation until you have planted your seed. Thin planting is preferable to thick planting. If planted too thickly, the seedlings will get spindly and will be more difficult to transplant successfully when the time comes.

The next day, rotate container in which you have planted seed, tilting sharply to distribute seed evenly over the surface of the agar. Be patient -- quick, abrupt movements will cause some of the seed to get down between the side of the container and the agar. Even with care, a little will do this anyway.

Signs of germination will appear in 4 to 6 weeks, but may be 8 weeks or longer, depending on temperature. 70 to 80 degrees minimum is desirable -- in the shade. Do not expose containers to full sunlight.

Alternate method of Planting

Another method of planting, and perhaps easier, is to replace the seed in the test tube after you have filtered the sterilizing solution from it. Refill the tube with distilled water before or after placing the seed in it, depending on which you find easier. Shake the tube to distribute the seed in the water, and draw up a quantity of seed and water in a hypodermic syringe or medicine dropper, and eject onto the agar. Needless to say, all implements used must be sterile.

Extra Precaution

As an added precaution to prevent contamination, swab the necks of the flask or bottles, or the rims of the fruit jars with the sterile solution before re-stoppering or replacing the lids. Note: Be sure to sterilize jar rubbers at the same time you sterilize jars and agar.

HOSPITAL CLEANLINESS is essential for success in germinating and growing plants from orchid seed. Even with the utmost care, mold will sometimes form in the containers after planting. It is therefore desirable to plant only a part of your seed at one time; if something happens to one planting you will have some left for another planting. Keep your orchid seed in your electric refrigerator on the top rack and at the extreme side of the box away from the freezing compartment. Do not freeze the seed, and keep it dry. Kept in this manner, it should remain viable for several months or longer.

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NOTE: The seedlings should be ready for planting into community pots in approximately 10 to 12 months after seed is planted. Transplant from agar when rootlets are $1/8$ to $1/4$ inch long.